# PURINE NUCLEOSIDE PHOSPORYLASE FROM Plasmodium falciparum AS A TARGET FOR THE DEVELOPMENT OF ANTIMALARIAL DRUGS

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Malaria causes 350-500 million of infections and 1-1.5 million of deaths annually. Most severe forms of malaria and majority of deaths are caused by the Apicomplexa endoparasite Plasmodium falciparum. An essential step in the life cycle of protozoan parasites is cellular replication that demands for large quantities of purines for RNA and DNA synthesis. P. falciparum lacks de novo purine synthesis and the demand for purine bases makes growth of Plasmodium sensitive to disruption of pathways leading for purine salvage. Enzymes of the purine salvage pathway were detected in P. falciparum including purine nucleoside phosporylase (PNP), which catalyses the phosphorolysis of inosine to hypoxanthine, making the PNPs potential targets for antimalarial drugs. The aim of this study was the synthesis of pfPNP gene, which was carried out using a patented proprietary gene assembly technique. The gene was cloned into pET23(a)+ expression vector and sequenced to confirm its identity and the absence of mutations. The expression in Escherichia coli cells and purification by FPLC system will allow the immobilization of this enzyme using the Surface Plasmon Resonance. This technology makes possible the search of natural products from the Brazilian biodiversity as possible inhibitors that may be used for the treatment of malaria.